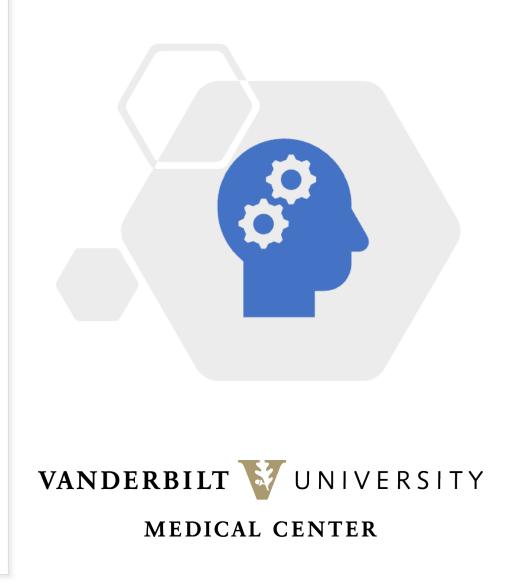
Enabling Effectiveness, Safety, and Equity via Algorithmovigilance

Peter J. Embí, MD, MS, FACP, FACMI, FAMIA, FIAHSI

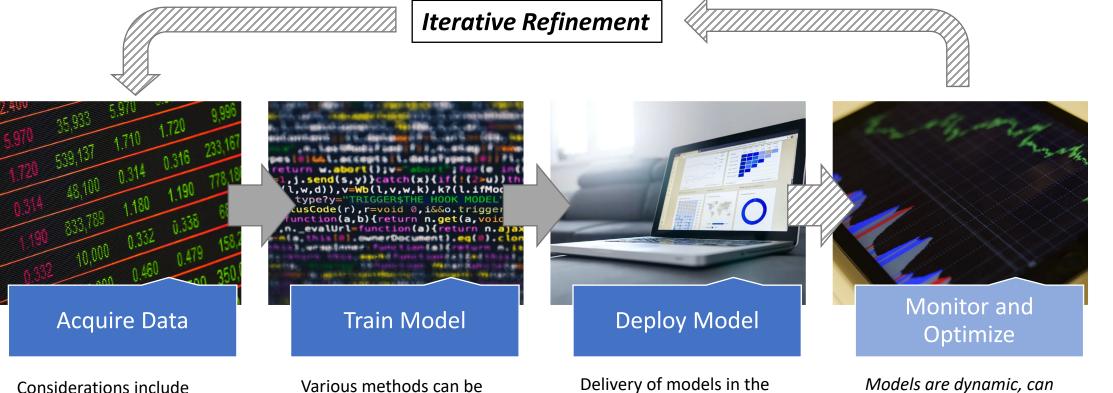
Professor & Chair of Biomedical Informatics Professor of Medicine Senior Vice-President for Research & Innovation Vanderbilt University Medical Center

ONC Health IT Advisory Committee

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Creating and Using Health AI - Simplified



Considerations include scale, diversity, volume, fairness, and labeling of data. Data can inherit society and system's biases Various methods can be combined to identify meaningful patterns in data (analytical models) <u>or</u> generate novel content (generative models) Delivery of models in the right time, place, and format is essential for success and effectiveness

Models are dynamic, can be biased, and change over time, requiring continuous monitoring and optimization:

Algorithmovigilance

"Algorithmovigilance"

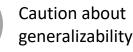


"The scientific methods and activities relating to the evaluation, monitoring, understanding, and prevention of adverse effects of algorithms in health care."





Biases in Data: Known <u>and</u> Unknown





Akin to pharmacovigilance for monitoring drug effects



Unexpected results can be expected



Must monitor to promote trust



Increasingly important as AI/ML-derived algorithms are used



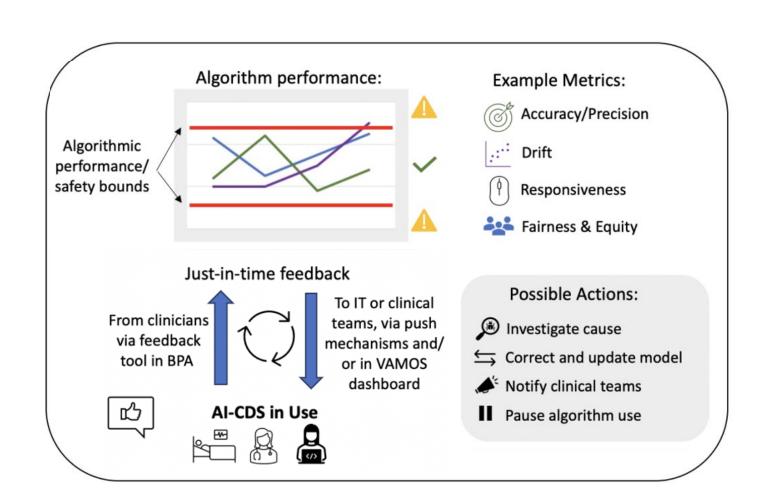
Need new systems and approaches



Essential for safe, efficient, effective and equitable care

Embi PJ. JAMA Network Open. 2021;4(4):e214622.

Example: The Vanderbilt Algorithmovigilance Monitoring and Operations System (VAMOS)



- Novel socio-technical system of processes and analytical dashboarding for Health AI:
 - Organizational governance and oversight
 - Capturing and Reporting Adverse events
 - Team-based monitoring
 - Responding to issues

Thank You!



Questions or Comments?



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